ontario hydro
research division

To: Mr.N.M. Thompson
Group Manager
Stations & Transmission Design
Design & Development - Transmission

POLYMER INSPECTION PROGRAM
MARINE JUNCTION - OTONABEE TS
1986 VISUAL INSPECTION PROGRAM

W.A. Chisholm and D.E. Murphy
Electrical Research Department

Daytime and night-time visual observations were carried out on the Marine Junction - Otonabee TS polymer insulator test line. Towers 1-5 were inspected for damage; tower 5 and the station structure were checked for corona sources at night.

There are brown marks on one of the dead-end units of tower 1. Otherwise, the insulators appear in good condition.

1.0 *INTRODUCTION*

A long-term program to monitor the performance of 20-kip long-rod polymer insulators was set up in 1983. A test line of twelve double-circuit 230 kV towers was insulated with over 100 units and energized at normal line voltage. Annual visual and corona inspections have shown no visual degradation until now.

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2.0 *INSPECTION RESULTS*

Towers 1-5 were inspected from the ground with the use of a 1400mm telescope and camera. At the bottom outside phase of circuit H24C, two brownish marks were apparent on the ground-end shed, as shown in Figures 1 and 2. All other insulators were checked and photographs were taken of the ground-end sheds.

Previous night-time inspections identified the cotter keys at the Otonabee station dead-ends as corona sources. This year, the image intensifier was again used to identify sources. The cotter keys are still in corona; no other sources were found. Photographs were taken without the image intensifier by using 5-minute time exposures. With the clear, moonlit conditions, improved picture quality resulted. Tower 5 was also inspected but no corona sources were identified.

3.0 *ASSESSMENT*

The brown marks on the Tower 1 insulator may have resulted from electric arc burns or other environmental stress. The unit should be monitored for signs of tracking and checked closely when removed. Otherwise, the insulators have not changed in appearance.

Approved:

A.F. Baljet
Manager
Electrical Research Department

Submitted:

W.A. Chisholm
Engineer/Physicist
Transmission and
Special Projects Section

D.E. Murphy
Technologist
Transmission and
Special Projects Section

WAC:DM:wac

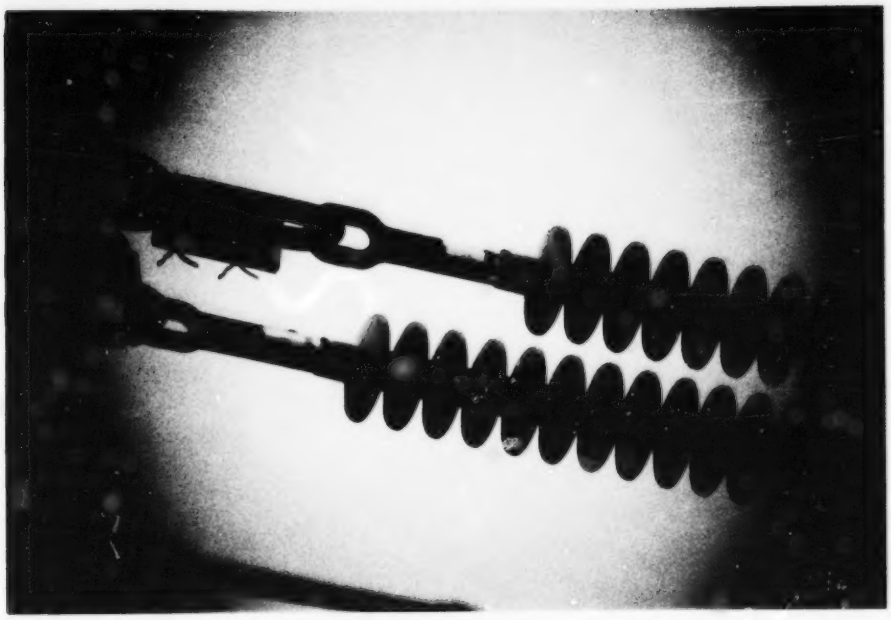

Figure 1: Bottom Phase Insulators, Tower 1 of Circuit H24C

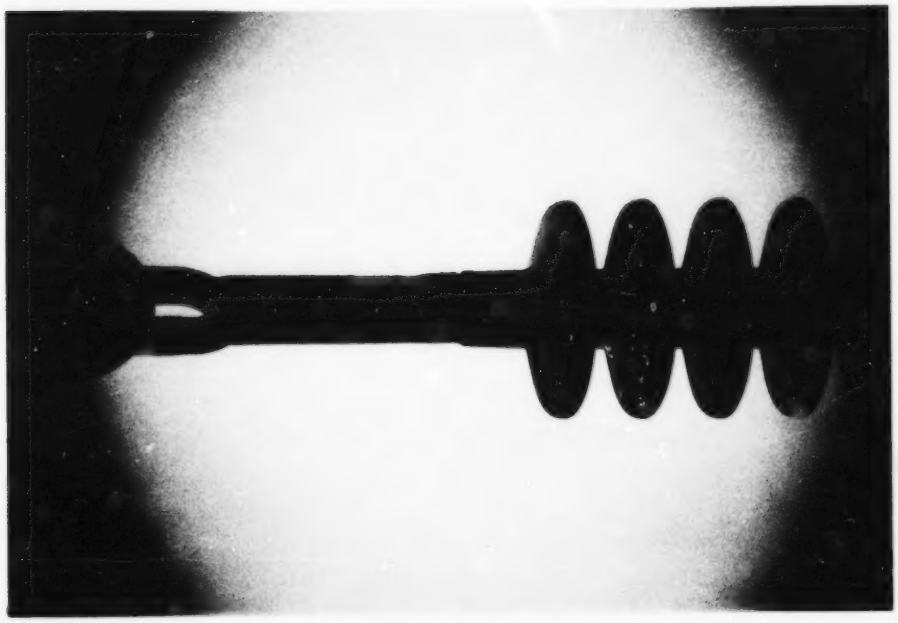

Figure 2: Close-Up View of Line-End Shed from Figure 1

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